

N^o 25,004



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Complete Specification Left, 26th Sept., 1894—Accepted, 17th Nov., 1894

PROVISIONAL SPECIFICATION.

Improvements in the Method of Effecting Hydraulic Massage, and in Apparatus therefor.

I, WILLIAM S. BLUNT of Upper Montclair in the County of Essex and State of New Jersey United States of America, Hydraulic Engineer do hereby declare the nature of this invention to be as follows :—

This invention relates to a method of effecting massage, or the rubbing and kneading of the patient, or a portion of his person, by means of water or other liquid, either medicated or not and either warm or cold. It also relates to an apparatus for carrying out this method.

To effect the massage, the body, or some part thereof, as an arm or leg, is submerged in a liquid, as water, at the desired temperature, and jets of liquid, which may also be water at the required temperature, are directed against the part submerged so as to impinge thereon through the surrounding liquid protecting medium. Preferably the liquid of submersion is drawn off from the containing vessel at or near the bottom thereof by a pump and forced in again through the kneading jets, thereby producing a downward current in the liquid about the body, or part thereof being treated, so that the combined effect of the jets and of this current produces a downward, rubbing effect on the skin and muscles. The intervening water-cushion, combined with the action of the jets, has the effect of soft, moist fingers rubbing and kneading the surface.

The apparatus employed comprises, first, a containing vessel for the liquid, and such vessel may have capacity for the entire body, or for only a limb, as an arm or leg. Second, a ring or rings of jets opening into said vessel and directed toward its middle or axis so as to impinge on the body in the vessel. Third, a pump or like liquid forcing device connected at the induction side with the bottom of the vessel and at the eduction side with the jets. These are the essentials; but I prefer to employ several series or rings of jets at different levels and provide cut-off devices so that one or more of the series may be used at will. Pressure and temperature gauges should also be provided and means for regulating the supply of hot and cold liquid to the apparatus.

Where the apparatus is constructed to receive the entire body of the patient, the vessel may be provided with a platform for the patient to stand on and this platform may be provided with means for raising and lowering it. By manipulation of the cocks in the pipes, the liquid may be pumped from the apparatus into the sewer or waste-way.

Dated this 28th day of December 1893.

WM. P. THOMPSON & Co.,
Of 6, Lord Street, Liverpool, Agents for the Applicant.

COMPLETE SPECIFICATION.

Improvements in the Method of Effecting Hydraulic Massage, and in Apparatus therefor.

I, WILLIAM S. BLUNT of Upper Montclair in the County of Essex and State of New Jersey, United States of America, Hydraulic Engineer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to a method and apparatus for effecting massage, or the rubbing or kneading of the patient, or of a portion of his person, by means of water or other liquid, either medicated or not, and either warm or cold.

To effect the massage the body, or of some part thereof—as an arm or leg—is submerged in a liquid, as water at any desired temperature, and jets of liquid, which may also be water at any desired temperature, are directed against the part submerged, so as to impinge thereon through the surrounding liquid protecting medium. Preferably, the liquid of submersion is drawn off from the containing vessel at or near the bottom thereof by means of a pump and forced in again through the kneading-jets, thereby producing a downward current in the liquid about the body or the part thereof being treated so that the combined effect of the jets and of this current produces a downward, rubbing effect on the skin and muscles. The intervening water-cushion combined with the action of the jets, has the effect of soft, moist fingers rubbing and kneading the surface.

In carrying out my improved method I prefer to employ the apparatus shown in the annexed drawings, wherein—

Figure 1 is a vertical axial section of the apparatus and Figure 2 is a plan view of the same.

The leading characteristics of my apparatus are, mainly, these: The patient, or person being treated, stands erect in a tub or receptacle with his body immersed in liquid in the tub, the liquid forming an embracing layer or stratum of any desired thickness depending on the diameter of the tub. Surrounding him, and arranged in zones at different levels, are perforated jet pipes, preferably of hoop-like form, and these are each connected independently with an upright stand pipe, into which the liquid is forced by a force pump or other liquid forcing device or mechanism. The liquid passes from the stand pipe into such of the perforated jet pipes as it may be desired to use, one or all, and is emitted in strong jets directed at the body of the person treated through the embracing wall or envelope of liquid about him. The pump takes the liquid from the bottom or lower part of the tub or receptacle and delivers it again into the same through the jet pipes, thus using the same liquid over and over as long as may be desired, by a circulatory process, and at the same time producing a downward flow or current in the receptacle about the body and across the paths of the jets. The receptacle or tub is provided with an adjustable platform to support the person being treated, and means are provided for emptying, draining and flushing the apparatus after use and for filling the receptacle primarily to the proper level. Means are also provided for supplying hot and cold liquids so as to maintain or vary the temperature of the liquid being used, and also for ascertaining at any time the temperature and pressure of the liquid in the pipes.

As represented in the drawings, the apparatus comprises an upright tub or receptacle, *a*, which may be of sheet metal and provided with a cast metal bottom, *a*^x. Within this tub are arranged at different levels, ring-like, perforated jet-pipes, *b*, each of which is connected through the wall of the tub with an upright stand pipe, *c*. Valves, *d*, of some suitable kind are provided for cutting off one or more of the jet pipes from the stand pipe without in any way interfering with the others.

Blunt's Improvements in the Method of Effecting Hydraulic Massage.

The tub may be filled, primarily, from cocks, *e*, similar to those of the ordinary bath tub and adapted to furnish hot and cold water. Within the tub is a platform, *g*, for the person to stand on while being treated, and this platform may be mounted on a rod, *g*^x, which plays through a stuffing box or packed gland in the bottom of the tub. This rod may be the piston of a hydraulic jack of a known kind and the platform be raised by the jack.

h represents any kind of liquid forcing apparatus, preferably a suction and force pump. The liquid is taken by the pump from the bottom or lower part of the tub *a*, through the suction pipe, *i*, and delivered to the stand pipe *c* by a pipe *j*.

10 A pressure gauge, *k*, and thermometer, *m*, will be employed to determine the pressure of the liquid in the pipe *j*, and its temperature. Hot and cold water may be supplied to the suction pipe by the respective pipes *n* and *i*, and the water may be drawn from the tub by a cock *r*.

The waste liquid from the tub, after the treatment of a patient, may be drawn 15 away at the cock *r*, or it may be drawn out by the pump and forced away to the sewer or other point, by a pipe *s*. The cock *t* may be a two way cock, arranged to direct the flow from the pump either through the pipe *j*, or the pipe *s*, as desired.

The pressure gauge, the thermometer, and the various controlling cocks should, 20 for convenience, be within easy reach of the attendant, so that he may observe the temperature and pressure and be in position to control them promptly; but I have not deemed it necessary to show them herein grouped in one place, as it is within the province of any skilled mechanic to place them wherever desired.

I have described my apparatus as constructed for use in effecting hydraulic 25 massage where the body is to be immersed or partly immersed; but it might be used without immersing the body, the jets in that case impinging directly upon the body. It will be obvious that by reason of the facilities for operating the apparatus with the tub *a* filled to any desired depth, and for cutting off any one or more of the jet pipes from the stand pipe, the apparatus may be used in 30 various ways.

The jets, or rather jet apertures, may be of any desired form, but I prefer the circular form. Some of the jets may be inclined upward, some inclined downward, and others be horizontal, or all may be either way.

I have shown the apparatus so constructed as to direct a ring of jets radially 35 inward upon a person standing in the center of the tub, and so as to impinge upon him from all sides simultaneously, and I prefer this form; but I do not limit myself to this particular arrangement as good results may be attained from jets coming only from one side, the body being turned around in order to receive them. Other variations will also suggest themselves, as the use of a tub or receptacle of some 40 other than cylindrical form, or one adapted for applying the massage to a person in a seated or even reclining position; but these are only immaterial departures from the apparatus shown herein.

My apparatus may, as before stated, be utilized for other purposes than the treatment of persons; as for certain kinds of cleansing and scouring, for example. 45 The liquid used may be water, or medicated water, or water mixed with other liquids or substances. Indeed any liquid may be circulated through the apparatus, the kind of liquid, as well as its temperature, and the kind of materials, if any, that are mixed therewith, depending on the uses to which the apparatus is put.

For hydraulic massage I prefer to leave the tub or receptacle *a* uncovered, but 50 for other uses a cover may be desirable.

For simplicity and convenience I prefer to employ a single pump or other mechanism for effecting the circulation of the liquid, but the latter may be removed from the tub by one mechanism, which thereby produces a downward current around the immersed body transversely of the jets, and another mechanism may be used 55 for supplying the liquid to the jet pipe or pipes under pressure. I also contemplate using jets having far more energy or force than can be obtained from the mains of cities.

Blunt's Improvements in the Method of Effecting Hydraulic Massage.

In the drawings, the pump is indicated somewhat diagrammatically and without any attempt to proportion it to the size of the other apparatus. If a pump be employed for effecting the circulation, its size will depend on the quantity of liquid to be forced.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. The combination with a tub to contain a liquid for immersing the body or some part thereof, of a series of jet-pipes arranged within said tub at different levels, a liquid forcing and exhausting mechanism, exterior to said tub, connected on its receiving side with the bottom or lower part of the tub and on its delivery side with the said jet-pipes, substantially as described, whereby solid, submerged jets of liquid, under considerable pressure, may be directed against the body through the liquid which surrounds the same, as set forth. 10

2. The combination with a tub or receptacle containing liquid, and a jet-pipe with jet apertures submerged in the liquid in said tub, of a liquid circulating and forcing mechanism exterior to the tub, connected on its receiving side with said tub at or near its bottom and on its delivery side with the said jet pipe, whereby submerged jets of liquid may be delivered with energy through the surrounding wall of liquid on a body immersed in the tub, as set forth. 15 20

3. The combination with an upright tub or receptacle, *a*, containing liquid, and a series of ring-like jet pipes arranged in the said tub and submerged in the liquid therein, said pipes being arranged to deliver jets inward toward the axis of the tub, means exterior to the tub for creating a downward current or flow of liquid in the tub by removing the liquid at the bottom as fast as it is supplied from the jet pipes, and means for forcing liquid into the said tub through the submerged jet pipes, substantially as set forth. 25

4. The method of applying a submerged jet of a liquid under pressure to the surface of an object immersed in a liquid, which consists in directing the jet toward the object through the interposed liquid cushion surrounding the same and causing the jet to impinge on the object, as set forth. 30

5. The herein described method of effecting hydraulic massage, which consists essentially in forcing submerged jets of liquid at or against a body immersed in a liquid which latter is interposed as a mobile wall or stratum between the jet outlet and the body. 35

6. The herein described method of effecting hydraulic massage, which consists in forcing submerged jets of liquid at or against a body immersed in a liquid interposed as a mobile cushion between the jet outlet and the body, and simultaneously producing in the immersing liquid a current in excess of gravity, transversely of the path of the jets. 40

Dated this 25th day of September 1894.

WM. P. THOMPSON & Co.,
Of 6, Lord Street, Liverpool, Agents for the Applicant.



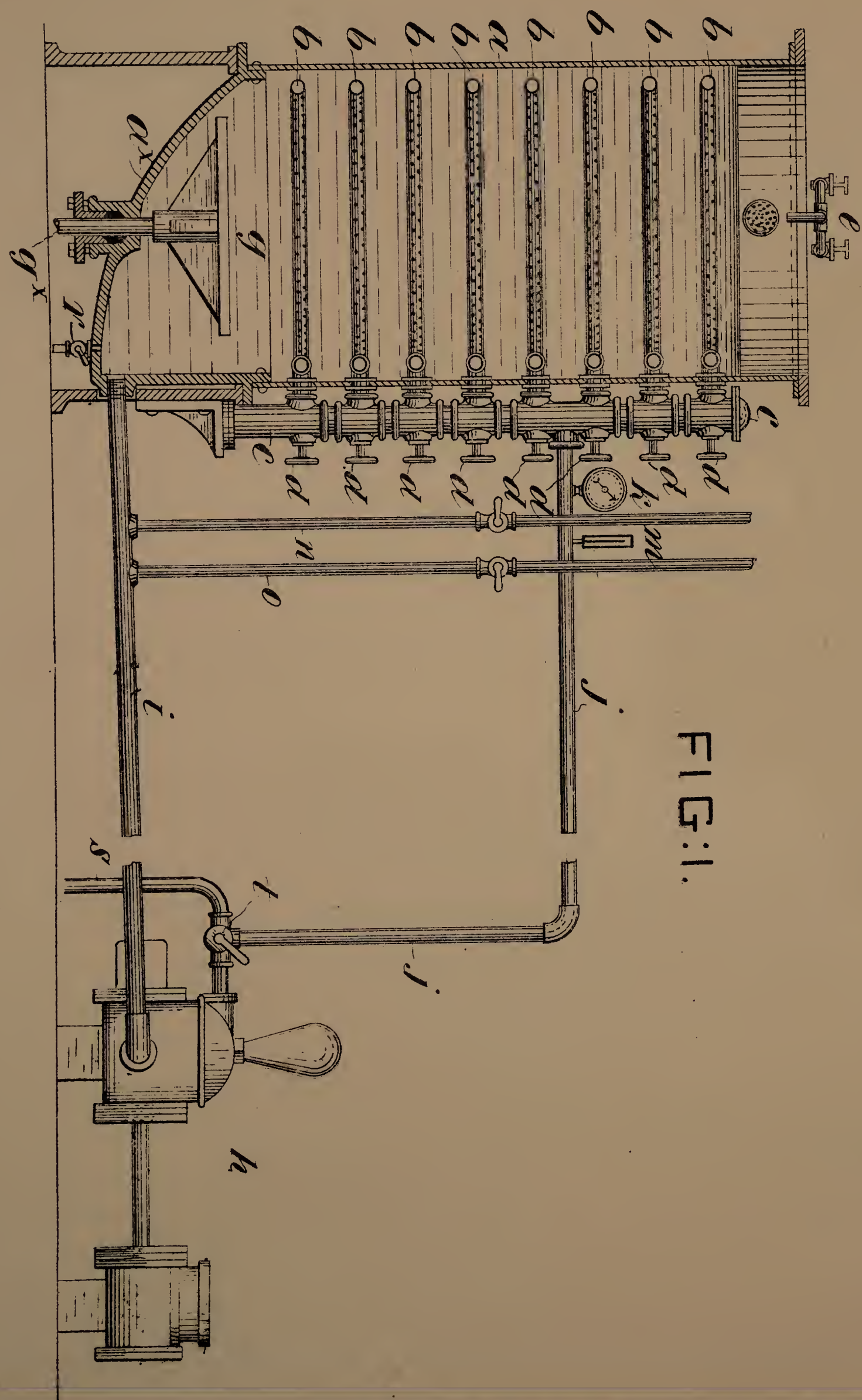


FIG:1.

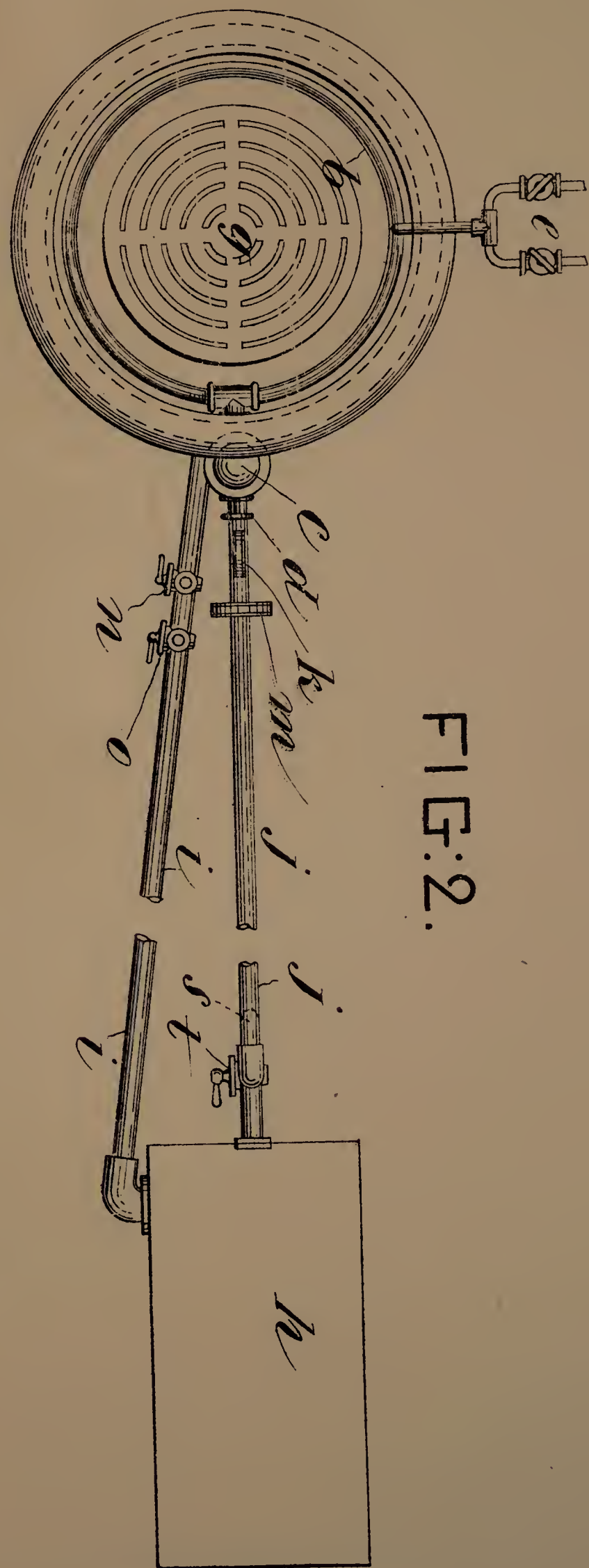


FIG:2.

[This Drawing is a reproduction of the Original on a reduced scale.]

